Claims

1. A method for classifying by means of a computing system, connections detected between senders and receivers in communication networks which use protocols, each named by a usable protocol name, characterized in that in the computing system:
- associated with each usable protocol name is a protocol selfidentifier mechanism devised so as to recognize determinant information of the protocol named by this name, from among information conveyed in a detected connection,
- associated with each so-called father protocol usable protocol name is a non empty or empty list of so-called son protocol usable protocol names,
- with each connection detected, a computing kernel associates (1002, 1003) a first data structure devised so as to contain an ordered sequence of used protocol names which is initialized with a so-called base protocol name,
- for each connection detected, the computing kernel constructs (1004) the first data structure by searching (2000) through the list of son protocol names, associated with the last name of said ordered sequence, for a son protocol name for which the associated selfidentifier mechanism recognizes (2002, 2007) determinant information from among the information conveyed and then by appending (2003) to the end of the ordered sequence, the son protocol name when it is found and by starting to search again so long as it is possible to find (2009) in the list of son protocol names, associated with the last name of said ordered sequence, a son protocol name for which the associated selfidentifier mechanism recognizes determinant information from among the information conveyed,

- the computing kernel declares (2010) classified the connection detected when it is no longer possible to find in the list of son protocol names, associated with the last name of said ordered sequence, a son protocol name for which the associated selfidentifier mechanism recognizes determinant information from among the information conveyed.

2. The method for classifying connections as claimed in claim 1, characterized in that to search for a son protocol name, the computing kernel submits (2006) the information conveyed, to each selfidentifier mechanism associated with a name from the list of son protocol names until one of the selfidentifier mechanisms declares (2007) recognition of determinant information or until no selfidentifier mechanism can declare recognition (2012) of determinant information.

3. The method for classifying connections as claimed in claim 1, characterized in that to search for a son protocol name, the computing kernel submits (2002) the information conveyed to the selfidentifier mechanism associated with the last name of the ordered sequence, in such a way that this selfidentifier mechanism finds the name of the son protocol among the determinant information of the father protocol.

4. The method for classifying connections as claimed in one of the preceding claims, characterized in that the computing kernel formulates (1001) a current signature for each connection detected, by submitting all or part of the information conveyed to at least one selfidentifier mechanism associated with one of the names of low rank in said ordered sequence, in such a way that this selfidentifier mechanism finds among the

determinant information, source and destination indicators incorporated into said current signature by the computing kernel.

5. The method for classifying connections as claimed in claim 4, characterized in that the computing kernel catalogs each first data structure in a first table (1) by establishing a first associative correspondence between each first data structure and the current signature formulated (1001) for the associated connection.

6. The method for classifying connections as claimed in claim 5, characterized in that the computing kernel establishes (1003, 2011) in said first table (1) a second associative correspondence between each current signature and a peer signature whose source indicators are the indicators of destination of the current signature and whose destination indicators are the indicators of source of the current signature.

7. The method for classifying connections as claimed in one of claims 5 and 6, characterized in that:

- the computing kernel gathers (1000) in data packets passing through the computing system within connections to be detected, the useful information conveyed so as to formulate a signature in such a way as to formulate (1001) the current signature whenever the useful information conveyed is sufficient,
- the computing kernel uses the current signature thus formulated in real time to detect a connection, in such a way as to search (1002) in said first table (1), for the first data structure which corresponds to the current signature, to associate (1003) a new first data structure with the connection detected when there exists no first data structure which

corresponds to the current signature and to start or continue (2000) to construct the first data structure when there exists a first data structure which corresponds (1002) to the current signature, by gathering (1000) in the data packets, the useful information conveyed so as to construct first data structure.

8. The method for classifying connections as claimed in claim 7, characterized in that, when the useful information gathered in a data packet is not sufficient to formulate a signature, the computing kernel catalogs the useful information in a second table by establishing an associative correspondence between the useful information which then comprises links of membership to one and the same connection, until the useful information is sufficient to formulate the current signature.

9. The method for classifying connections as claimed in one of the preceding claims, characterized in that:

- the computing kernel traverses (1006) the used protocol names of the ordered sequence in the data structure which it constructs so as to detect (1007) each dynamic connection protocol name,
- for each dynamic connection protocol name detected, the computing kernel submits (1008) the information conveyed to the selfidentifier mechanism associated with the name detected in such a way as to determine whether there exists a subsequent dynamic connection and if a subsequent connection exists, to associate therewith (1009) a second data structure devised so as to contain an ordered sequence of potential protocol names which begins with the so-called base protocol name.

10. The method for classifying connections as claimed in claims 5 and 9, characterized in that the computing kernel catalogs (1009) each second data structure in a second table (2) by establishing an associative correspondence between each second data structure and a potential signature formulated by the selfidentifier mechanism associated with the name detected.

11. The method for classifying connections as claimed in claim 10, characterized in that the computing kernel furthermore constructs the first data structure:

- by searching (2004) for the ordered sequences of potential protocol names in which the ordered sequence of used protocol names is included and,
- when there exists (2005) an ordered sequence of potential protocol names whose potential signature corresponds to the current signature, by completing (2003) the first data structure by means of the second data structure.